

Remarks

Reconsideration of the above-identified patent application in view of the following remarks is respectfully requested.

Claims 1-15 are pending in the present application. Claims 1, 5, 11, 13 and 14 have been rejected. Claims 2-4, 6-10, 12 and 15 have been indicated to be allowable if rewritten in independent form including all of the elements of their respective base claim and any intervening claims.

Claims 1, 5, 11, 13 and 14 stand rejected as being unpatentable under 35 U.S.C. §103(a) over U.S. 6,630,815 to Hanafusa et al. ("Hanafusa") in view of U.S. Patent Pub. No. 2002/0075397 to Hanada ("Hanada"). Reconsideration and allowance of claims 1, 5, 11, 13 and 14 is respectfully requested for at least the following reasons:

Regarding claim 1 of the present application, it is respectfully suggested that neither Hanafusa nor Hanada teaches or suggests a current control device that is responsive to at least one of an output voltage of a battery and temperature for adjusting a current draw from the battery to insure a predetermined minimum output voltage from the battery, as recited in claim 1 of the present application. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Hanafusa discloses a battery protective circuit that includes a positive temperature coefficient (PCT) element 55 of a current-amount control circuit 50 that gradually increases in electric resistance as the value of current flowing in the

element increases and the ambient temperature increases (See Hanafusa, Col. 5, lines 34-38). In claim 1 of the present application, the control device is responsive to at least one of an output voltage of the battery and temperature. Thus, in claim 1 of the present application, the control device is responsive to temperature. As stated above, in Hanafusa, PCT element's electric resistance increases when there is current flow increase and ambient temperature increase, i.e., both are required. Hanafusa does not teach or suggest that the PCT element's electric resistance can increase when there is an ambient temperature increase alone. Thus, Hanafusa does not teach or suggest a current control device that is responsive to at least one of an output voltage of a battery and temperature for adjusting a current draw from the battery to insure a predetermined minimum output voltage from the battery, as recited in claim 1. Furthermore, the addition of Hanada does not cure the aforementioned deficiencies of Hanafusa.

Hanafusa also does not teach or suggest a current control device that is responsive to at least one of an output voltage of a battery and temperature for adjusting a current draw from the battery to insure a predetermined minimum output voltage from the battery, as recited in claim 1 of the present application. Therefore, taken individually or in combination, Hanafusa and Hanada do not teach or suggest each and every element of claim 1 of the present application.

Additionally, it is respectfully submitted that Hanafusa is non-analogous art to the invention of claim 1 of the present application. The U.S. Court of Appeals for the Federal Circuit ("Federal Circuit") has set forth a two-part test to determine if a reference is non-analogous art, namely: (1) whether the reference is within the field

of the inventor's endeavor, and (2) whether the reference is reasonably pertinent to the particular problem with which the inventor was involved. *In re Deminski*, 796 F.2d 436, 442, 230 U.S.P.Q. 313, 315 (Fed. Cir. 1986).

Hanafusa is clearly not in the same field of endeavor as claim 1 of the present application. Hanafusa is related to a battery protection system for a portable telephone's rechargeable battery (See Hanafusa, Col. 4, lines 44-55). Claim 1 of the present application is related to a circuit for controlling voltage in a tire-based unit of a tire parameter sensing system. In *Wang Lab. Inc. v. Toshiba Corp.*, the Federal Circuit held that a reference was not in the same field of endeavor as claimed subject matter merely because it relates to memories. 993 F.2d 858, 26 U.S.P.Q.2d 1767, 1773 (Fed. Cir. 1993). Analogously, in the present case, just because Hanafusa and claim 1 of the present application relate to battery technologies does not mean that Hanafusa is in the same field of endeavor as claim 1 of the present application. One skilled in the art of tire parameter sensing would not look to portable telephone arts to find elements of claim 1 of the present application. Thus, Hanafusa is not in the same field of endeavor as claim 1 of the present invention.

Additionally, Hanafusa is not reasonably pertinent to the particular problem with which claim 1 of the present application is involved. Claim 1 of the present application insures a predetermined minimum output voltage from a battery. Hanafusa discloses a battery protective circuit that prevents current flowing in a battery from exceeding a guaranteed current when a short or overcharge occurs (See Hanafusa, Col. 1, lines 5-10). Hanafusa is not concerned with insuring minimum output voltage from a battery. In fact, Hanafusa is not related to any

technology for regulating power delivered *from* a battery. Rather, Hanafusa is related to technology for regulating power provide *to* a battery. Thus, Hanafusa is not reasonably pertinent to the problem involved in claim 1 of the present invention. Accordingly, it is respectfully suggested that Hanafusa is non-analogous art to claim 1 of the present application.

For the reasons stated above, Hanafusa and Hanada do not make claim 1 obvious. Therefore, claim 1 is patentable over the cited art.

Regarding claim 5 of the present application, neither Hanafusa nor Hanada teaches or suggests a resistance varying device being responsive to at least one of a supplied voltage and a temperature for reducing a current draw from a battery so as to reduce a voltage drop resulting from an equivalent series resistance of a battery and maintain at least a predetermined minimum value of voltage to a sensor portion, as recited in claim 5 of the present application. As stated above with respect to claim 1 of the present application, Hanafusa and Hanada, whether taken individually or in combination, fail to teach any structure that varies resistance in response to temperature alone.

Additionally, claim 5 of the present application recites a sensor portion that is operative to sense a parameter of a tire when supplied with a voltage of at least a predetermined minimum value. Neither Hanafusa nor Hanada discloses any sensor that would be suitable for sensing a parameter of a tire. The Examiner contends that one skilled in the art would have readily recognized using the battery current control circuit in Hanafusa in which a battery is used to supply energy to a sensor of a tire (See Office Action, Pages 3-4). Applicant respectfully disagrees. The current

control circuit disclosed in Hanafusa prevents excessive current during a recharging of a battery. Claim 5 of the present application is not related to preventing excessive current during a recharging condition. The circuit recited in claim 5 of the present application maintains at least a predetermined minimum value of voltage to a sensor portion. Accordingly, Hanafusa and Hanada, whether taken individually or in combination, do not teach or suggest each and every element of claim 5 of the present application.

Furthermore, Applicant respectfully submits that Hanafusa is non-analogous art to claim 5 of the present application for substantially the same reasons discussed above with respect to claim 1 of the present application. Accordingly, for the reasons stated above, it is respectfully suggested that Hanafusa and Hanada do not make claim 5 of the present application obvious. Therefore, claim 5 is patentable over the cited art.

Claim 11 depends from claim 5 and is not obvious for at least the same reasons as claim 11, and for the specific elements recited therein. Accordingly, claim 11 is patentable over the cited art.

Regarding claim 13 of the present application, in contrast to the contention of the Examiner, claim 13 of the present application is substantially different from claim 1 of the present application. Claim 13 is not merely a method of implementing the circuit recited in claim 13. Specifically, claim 13 recites reducing current drawn from a battery, in response to determining an increase in equivalent series resistance. Claim 1 does not recite this element of claim 13.

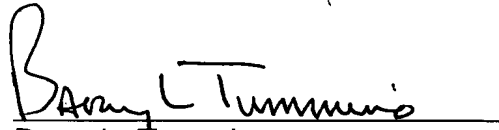
Additionally, neither Hanafusa nor Hanada teaches or suggest reducing a current draw from a battery in response to determining an increase in equivalent resistance, as recited in claim 13 of the present application. Hanafusa discloses a battery protective circuit that includes a PCT element 55 of a current-amount control circuit 50 that gradually increases in electric resistance as the value of current flowing in the element increases and the ambient temperature increases (See Hanafusa Col. 5, lines 34-38). Hanafusa is silent on reducing current draw in response to an increase in equivalent series resistance, as recited in claim 13 of the present application. Therefore, it is respectfully suggested that whether taken individually or in combination, Hanafusa and Hanada do not teach or suggest each and every element of claim 13 of the present application. Accordingly, Hanafusa and Hanada do not make claim 13 obvious. Therefore, claim 13 is patentable over the cited art.

Claim 14 depends from claim 13 and is not obvious for at least the same reasons as claim 14, and for the specific elements recited therein. Accordingly, claim 14 is patentable over the cited art.

In view of the foregoing, it is respectfully submitted that the above-identified patent application is in condition for allowance, and allowance of the above-identified patent application is respectfully requested.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,


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